Name:

at1113exam: Expand, factor, and solve quadratics (v556)

1. Expand the following expression into standard form.

$$(2x + 3)(2x - 3)$$

$4x^2 - 6x + 6x - 9$

$4x^2 - 9$

2. Expand the following expression into standard form.

$$(8x + 5)^2$$

$$(8x + 5)(8x + 5)$$
$$64x^2 + 40x + 40x + 25$$
$$64x^2 + 80x + 25$$

3. Solve the equation.

$$(4x + 3)(9x - 5) \;=\; 0$$

$x = \dfrac{-3}{4}$ $\qquad$ $x = \dfrac{5}{9}$

4. Expand the following expression into standard form.

$$(9x - 5)(3x - 2)$$

$$27x^2 - 18x - 15x + 10$$

$$27x^2 - 33x + 10$$

5. Solve the equation.

$$11x^2 - 53x - 43 \;=\; 4x^2 - 3x + 5$$

$$7x^2 - 50x - 48 = 0$$

$$(7x + 6)(x - 8) = 0$$

$$x = \frac{-6}{7} \qquad x = 8$$

6. Factor the expression.

$$x^2 + 14x + 48$$

$(x + 6)(x + 8)$

7. Factor the expression.

$$81x^2 - 25$$

$(9x + 5)(9x - 5)$

8. Solve the equation with factoring by grouping.

$$20x^2 + 15x + 8x + 6 \;=\; 0$$

$$5x(4x+3) + 2(4x+3)$$

$$(5x+2)(4x+3) = 0$$

$$x = \frac{-2}{5} \qquad x = \frac{-3}{4}$$